

### Remarks

Claims 1, 5-7, 9-17, 21-23 and 25- are pending. Claims 42, 52 and 63 are withdrawn. Claims 1, 16-17, 33, 36-39, 43-44, 46-48, 53, and 57-60 are amended for clarity.

The Examiner required Claims 42, 52 and 63 be withdrawn pursuant to his restriction requirement. Applicants hereby elect for further prosecution Claims 1, 5-7, 9-17, 21-23, 25-41, 43-51, and 53-62 (Group I).

The Examiner objected to Claims 36-39, 43-52 and 57-60 for lack of antecedent basis for certain limitations. As amended, Claims 36-39, 43-52 and 57-60 are believed to have overcome the Examiner's objection.

The Examiner rejected Claims 1, 6, 9-11, 13-17, 21, 25-27, 29-34, 41, 43-44, 47-49, 51, 53-55, 58-60 and 62 under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent 6,640,251 ("Wiget"). With respect to independent Claim 1, the Examiner states:

As to claim 1, Wiget teaches the invention as claimed including: a method for providing, in a service provider's network, a multicast capability for a customer packet of a virtual private LAN service [e.g., Abstract; col.3, lines 29-39; Figs. 1a and 1b], comprising:

assigning the virtual private LAN service an Internet Protocol (IP) multicast group address in a private domain of the service provider's network [e.g., col.4, lines 17-25 and 48-50];

at a provider edge device [e.g., a configured IP VPN interface; 13-16, Fig.1 a; col.2, lines 65-67] associated with the virtual private LAN service [e.g., col.4, lines 50- 56], encapsulating the customer packet of the virtual private LAN service in an IP packet designating the IP multicast group address [e.g., Figs. 2a and 2b];

transmitting the IP packet over the service provider's network an IP multicast routing protocol from the provider edge device to a plurality of other provider edge devices associated with the virtual private LAN service [e.g., col.5, lines 24-32];

and

at each of the other provider edge devices associated with the virtual private LAN service, upon receiving the IP packet, recovering the customer packet [e.g., col.5, lines 57-65].

Applicants respectfully traverse the Examiner's rejection. As amended, Claim 1 recites an encapsulation in an IP packet designating an IP multicast group address and including an Ethernet header specifying an Ethernet multicast address:

1. A method for providing, in a service provider's network, a multicast capability for a customer packet of a virtual private LAN service, comprising:

assigning the virtual private LAN service an Internet Protocol (IP) multicast group address in a private domain of the service provider's network;

at a provider edge device associated with the virtual private LAN service, encapsulating the customer packet of the virtual private LAN service in an IP packet designating the IP multicast group address and including an Ethernet header designating a multicast Ethernet address associated with the IP multicast group address;

transmitting the IP packet over the service provider's network using an IP multicast routing protocol from the provider edge device to a plurality of other provider edge devices associated with the virtual private LAN service; and

at each of the other provider edge devices associated with the virtual private LAN service, upon receiving the IP packet, recovering the customer packet.

(emphasis added)

As discussed in Applicants' Specification, at page 6, lines 12-28, such encapsulation provides VPLS multicast capability using efficient layer 2 routing algorithms. Such encapsulation is neither taught nor suggested in Wiget. With respect to the encapsulation shown in Figures 2(a) and 2(b), on which the Examiner based his rejection, Wiget teaches:

Referring now to FIGS. 2a and 2b, in the preferred embodiment of the invention, depending on the security requirements, three different encapsulation formats can be used: without security, with authentication only or with encryption. The encapsulated methods are based on IPsec tunnel mode [RFC2401 . . . RFC2406]. The IP2 header contains the IP source and destination address from the providers address space (tunnel endpoint IP addresses or address as destination address). The IP1 header is the original IP packet header.

In FIG. 2a, we have shown an IPsec AH encapsulation (with authentication). FIG. 2b shows an IPsec ESP encapsulation (with auth. privacy).

(emphasis added)

Accordingly, Applicants respectfully submit that Claim 1 and its dependent Claims 5, 9-11, and 13-16 are each allowable over Wiget. Independent Claims 17, 33, 43 and 53 and their respective dependent Claims 21, 25-27, 29-32, 33-34, 37-39, 41, 44, 47-49, 51, 54-55, 58-60 and 62, each reciting the IP encapsulation limitations, are likewise each allowable over Wiget.

Further, Claims 5, 34, 44 and 55 each recite that the “IP multicast group address ... is selected from a range set aside for use with virtual private LAN service.” Such an arrangement, which avoids conflict with customer’s native IP addresses, as discussed, for example, in Applicants’ Specification, on page 5, lines 23-31, are neither disclosed nor suggested in Wiget. The Examiner’s reliance on Wiget’s col. 3, lines 1-4 is misplaced, as Wiget merely provides a definition of “Provider Address” in that portion of Wiget’s disclosure. Therefore, Claims 5, 34, 44 and 55 further distinguish over Wiget.

Claims 9-11, 25-27, 37-39, 47-49 and 58-60 recite “source-based routing protocol,” “core-based routing protocol,” and “a distribution tree,” respectively. As explained in Applicants’ Specification, for example, on page 7, lines 8-21, such arrangements provide efficient layer 2 distribution for VPLS multicasting. Neither these limitations nor their

attendant benefits are disclosed or suggested by Wiget. Accordingly, Claims 9-11, 25-27, 37-39, 47-49 and 58-60 also further distinguish over Wiget.

Reconsideration and allowance of Claims 1, 6, 9-11, 13-17, 21, 25-27, 29-34, 41, 43-44, 47-49, 51, 53-55, 58-60 and 62 are therefore requested.

The Examiner rejected Claims 6, 22, 35, 45 and 56 under 35 U.S.C. § 103(a) as being unpatentable over Wiget. The Examiner states:

However, Wiget teaches that each tunnel endpoint has an address assigned out of the Provider address space [col.3, lines 1-4]. Thus, it is obvious that each IP backbone provider must also have selected a range of IP multicast group addresses, allocated within each provider's address space, to cover all the tunnel endpoints it intends to interconnect because the range of IP multicast group addresses competes against the general IP address space allocated to each service provider and a range meeting an administrative scope local to the service provider's network would optimize the utilization of each provider's IP address space.

Applicants respectfully traverse the Examiner's rejection. First, as Claims 6, 22, 35, 45 and 56 each depend from their respective parent Claims 1, 17, 33, 43 and 53, Claims 6, 22, 35, 45 and 56 are each allowable over Wiget for the reasons already discussed above with respect to their parent claims. Second, the Examiner does not support his assertion above from the prior art. Without such support, the Examiner merely engages in impermissible hindsight reconstruction. Even then the Examiner is mistaken. As explained in Applicants' Specification, on page 5, lines 23-31, the service provider has full control over its local administratively scoped IP address space, and a possible conflict may arise only when the service provider also provides the customer a native IP multicast service. Neither the limitations of Claims 6, 22, 35, 45 and 56, nor their attendant benefits are disclosed or suggested by Wiget. Claims 6, 22, 35, 45 and 56 are therefore allowable over Wiget.

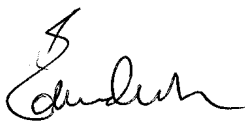
Reconsideration and allowance of Claims 6, 22, 35, 45 and 56 are therefore requested.

The Examiner rejected Claims 7, 12, 23, 28, 36, 40, 46, 50, 57 and 61 under 35 U.S.C. § 103(a) as being unpatentable over Wiget, in view of U.S. Patent Application Publication 2004/0165600 ("Lee"). The Examiner relies on Lee's teachings that a DNS name server and MPLS are known services.

Applicants respectfully traverse the Examiner's rejection. Claims 7, 12, 23, 28, 36, 40, 46, 50, 57 and 61 each depend from their respective parent Claims 1, 17, 33, 43 and 53. Accordingly, Claims 7, 12, 23, 28, 36, 40, 46, 50, 57 and 61 are each allowable over Wiget for the reasons already discussed above with respect to their parent claims. Because Lee provides no relevant teachings with respect to Wuget's deficiency (i.e., encapsulation by IP multicast group address and ethernet multicast), Claims 7, 12, 23, 28, 36, 40, 46, 50, 57 and 61 are each allowable over the combined teachings of Wiget and Lee. Reconsideration and allowance of Claims 7, 12, 23, 28, 36, 40, 46, 50, 57 and 61 are therefore requested.

Therefore, for the reasons set forth above, all pending claims (i.e., Claims 1, 5-7, 9-17, 21-23 and 25-41, 43-51 and 53-63) are allowable over the art of record. If the Examiner has any question regarding the above, the Examiner is respectfully requested to telephone the undersigned Attorney for Applicant at 408-392-9250.

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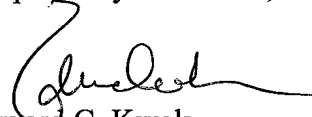


Attorney for Applicant(s)



Date of Signature

Respectfully submitted,



Edward C. Kwok  
Attorney for Applicant(s)  
Reg. No. 33,938